Brown County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors
10/3/14

13 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Brown County economy.[1]

These 13 sectors have a total direct output of approximately $341 million and support 970.8 jobs in Brown County. Running the model for all 13 sectors simultaneously produces the following results:

Agriculture Contribution in Brown Co						
Impact Type[2]	Employment	% Employment	Total Value Added[3]	% of Gross Regional Product[4]	Output[5]	% of Gross Regional Product
Direct Effect	970.8	13%	78,297,430.5	16%	341,172,913.9	70%
Indirect Effect	318.0	4%	31,124,473.6	6%	50,824,920.3	10%
Induced Effect	288.4	4%	20,266,833.1	4%	32,241,233.0	7%
Total Effect	1,577.3	21%	129,688,737.2	27%	424,239,067.3	87%

As shown in the above table, agriculture, food, and food processing supports 1,577.3 jobs, or 21% of the entire workforce in the county. These industries provide a total economic contribution of approximately $424 million, roughly 87% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 13 agriculture, food, and food processing sectors is approximately $130 million, or 27% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 27% of the total economy.

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1 Article on building a contribution analysis in IMPLAN that avoids double counting:
http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70

2 Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

3 Value added = labor income + indirect business taxes + other property type income.

4 GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

5 Output = intermediate inputs + value added.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

In the top ten by employment, Grain farming is the top employer in the agriculture industry with 482.0 employees. This table also shows the amount of jobs that are created by the agriculture industry in Brown County.

Description	Total Employment	Total Output
Grain farming	482.0	63,550,725.8
Oilseed farming	125.0	45,627,800.4
Farm machinery and equipment manufacturing	116.8	63,812,106.0
Real estate establishments	97.8	12,614,301.8
Cattle ranching and farming	89.8	31,901,988.1
Other animal food manufacturing	77.4	110,622,223.0
Wholesale trade businesses	49.0	9,347,830.4
Monetary authorities and depository credit intermediation activities	46.2	15,335,600.2
Food services and drinking places	43.2	2,305,261.3
Animal production, except cattle and poultry and eggs	34.1	3,920,679.4

The Other animal food manufacturing industry directly contributes approximately $111 million to Brown County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

Description	Total Employment	Total Output
Other animal food manufacturing	77.4	110,622,223.0
Farm machinery and equipment manufacturing	116.8	63,812,106.0
Grain farming	482.0	63,550,725.8
Oilseed farming	125.0	45,627,800.4
Cattle ranching and farming	89.8	31,901,988.1
Monetary authorities and depository credit intermediation activities	46.2	15,335,600.2
Other industrial machinery manufacturing	32.2	13,307,598.8
Real estate establishments	97.8	12,614,301.8
Wholesale trade businesses	49.0	9,347,830.4
Imputed rental activity for owner-occupied dwellings	0.0	6,481,941.7

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Brown County's economy.

Description	Employment	Output
Oilseed farming	124.99	45,019,554.14
Grain farming	482.02	62,703,556.06
Vegetable and melon farming	0.17	205,641.24
Greenhouse, nursery, and floriculture production	0.35	363,059.67
All other crop farming	4.66	3,809,285.64
Cattle ranching and farming	89.82	31,475,900.65
Dairy cattle and milk production	7.26	3,289,112.57
Poultry and egg production	0.32	649,380.51
Animal production, except cattle and poultry and eggs	34.12	3,868,314.27
Support activities for agriculture and forestry	0.65	813.70
Other animal food manufacturing	77.44	108,950,744.63
Farm machinery and equipment manufacturing	116.79	61,372,112.27
Other industrial machinery manufacturing	32.23	12,722,589.49
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All 105 counties in Kansas have Implan models and agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.